

The City and County of San Francisco FOG* Biofuel Program

Presented to the
Pacific Southwest Organic Residuals Symposium
October 2, 2008



*Fats, Oil and Grease

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Biofuel Recycling

Fats, Oils and Grease

- Every kitchen creates oil residuals from:
 - frying food
 - washing dishes
 - scraping the griddle
 - stove fume hoods

These residues in the wastewater stream impacts the sewer system in quite a unique way....

8" VCP

8178 BELVEDERE AV
061003004 -> 061003003

326'05"





The problem is significant

- Shallow runs are impacted greatly
- Commercial districts can be problematic
- Residential sewers are also a problem
- In San Francisco, 44% of the sewer crew work orders are related to FOG blockages
- Chipping, Picking, Scrapping, Steam Cleaning and Jack Hammering increases the wear and tear on a very old system.

A bit of the economics:

- The SFPUC spends 14 million each year for unblocking the sewers. This is a crew, on call 24 hrs a day, 7 days a week to stop the wastewater flowing in the street
- 44% of 14 Million is 6.1 Million just to clear FOG blockages
- Now there are a few estimates that cleaning sewer pipe, especially 100+ year old terra cotta pipe, reduces the life of the pipe by 5%, 4%, 3%, 0.5%...few estimates exist

The San Francisco collection system has approximately:

- 780 miles of sewer main (8" in diameter to the largest at 22') in the center of the street. For the 8" the price designed and installed is about 200 \$/LF increasing as the pipe gets bigger.
- 2,200 miles of 5" sewer laterals from the main to the property line. For these laterals the price designed and installed is about 115 \$/LF.

The cost of the sewer system

- Sewer Main

780 miles = 4,118,400 feet

4,738,370 LF * 200 \$/LF = 8.2 billion

- Sewer Lateral

2,200 miles = 11,616,000 feet

11,616,000 LF * 115 \$/LF = 1.3 billion

That is 9.5 billion for a new sewer system

And impacting it 5% = 475 million

4% = 380 million

3% = 285 million

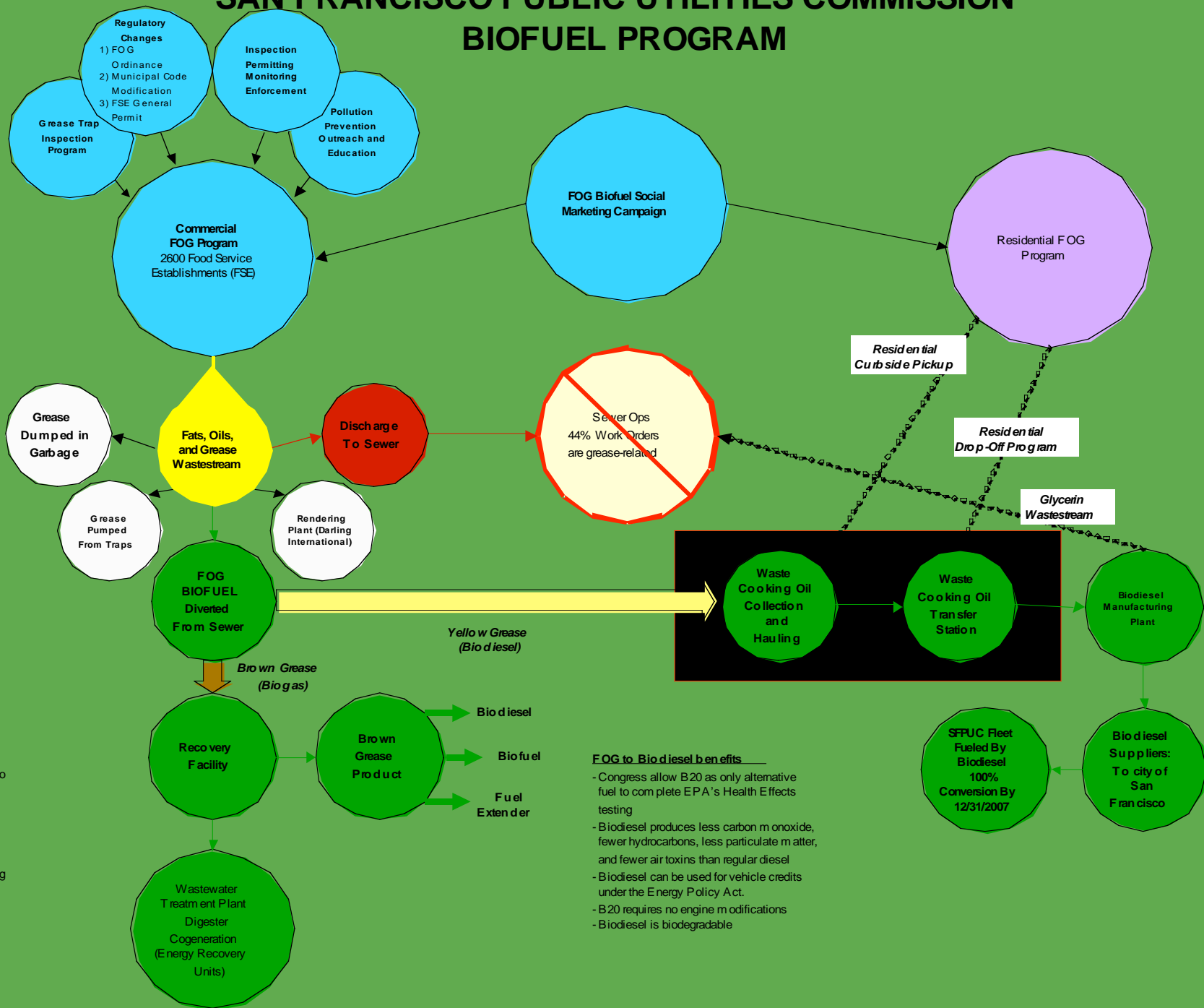
.5% = 47 million

Other reasons to protect the linear asset, the sewer system

- Public perception of bioenergy and alternative infrastructure is valuable
- Rising energy costs are expected
- Non-compliance with AB 32 will cost much more than that not according to a recent Air Quality Control Board study

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

BIOFUEL PROGRAM



The recycling service





AN INSTANT CLASSIC VIDEO GAME
OUTLOOK: Max Ebert's action storytelling makes it worth a try

AT-HOME DNA TESTS MULTIPLY
OUTLOOK: Google, 23andMe's behind-the-scenes work is making it easier to find your roots

San Francisco Chronicle

THURSDAY, NOVEMBER 26, 2009 \$5.00

San Francisco Bay Area

Homeland Security spill probe is sought

House members not pleased safety board could take a year

By Amy Iltis
San Francisco Chronicle Staff Writer

A House subcommittee, which has the authority to investigate the spill, is expected to launch a probe into the cause of the spill, according to a source familiar with the investigation. The source said the probe could take a year to complete.

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GREASY PATH TO A CLEAN FUTURE

SE to revamp restaurant cooking oil for use as fuel

By Charles Ross
San Francisco Chronicle Staff Writer

San Francisco officials are giving the city's greasy restaurant cooking oil a second chance. The city is planning to revamp the way the oil is collected and used, according to a source familiar with the project.

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GETTING BACK INTO THE FLOOD

Water after flood has receded is still a problem for many San Francisco residents. The city is working to help them get back into the flood zone.

California sues 20 companies over lead in toys

By David Kim
San Francisco Chronicle Staff Writer

California Attorney General Jerry Brown has filed a lawsuit against 20 companies for selling toys that contain lead. The lawsuit is the latest in a series of actions taken by the state to protect children from lead.

FINANCING STEPS TOWARD NORMALCY IN GERMANY

For the first time in nearly two years, people are buying cars in Germany. The car industry is seeing a resurgence in sales.

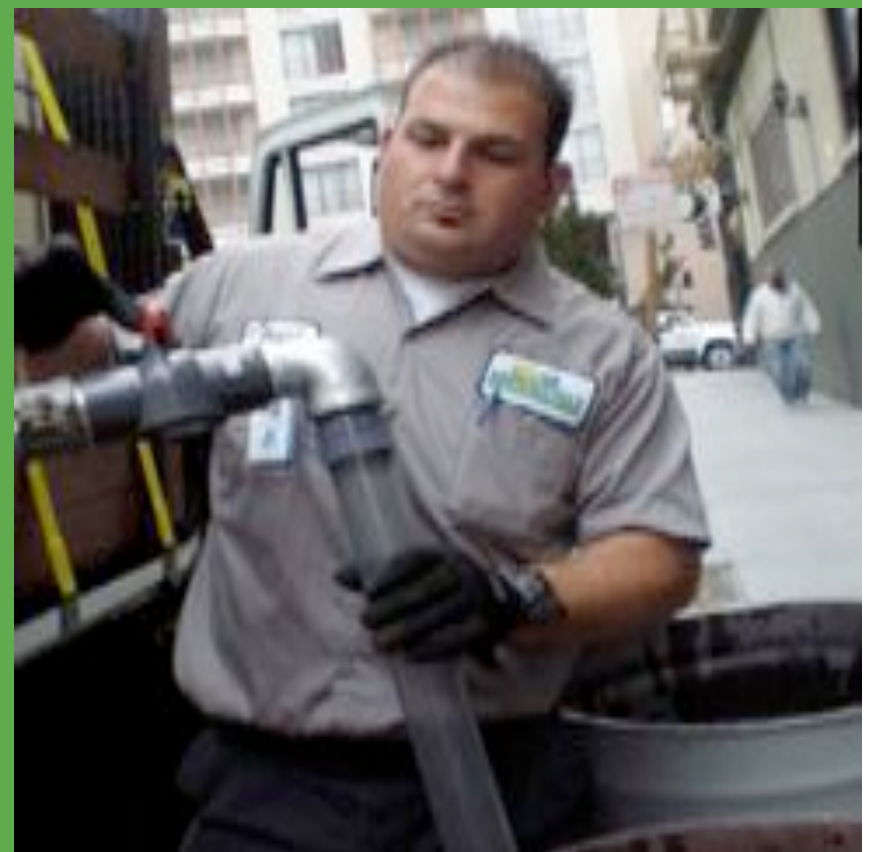
ESTIMATES OF NEW CASES WORLDWIDE CUT SHARPLY

Estimates of new cases of the H1N1 virus have been cut sharply. The World Health Organization has revised its estimates.













NO

NO

Almost there

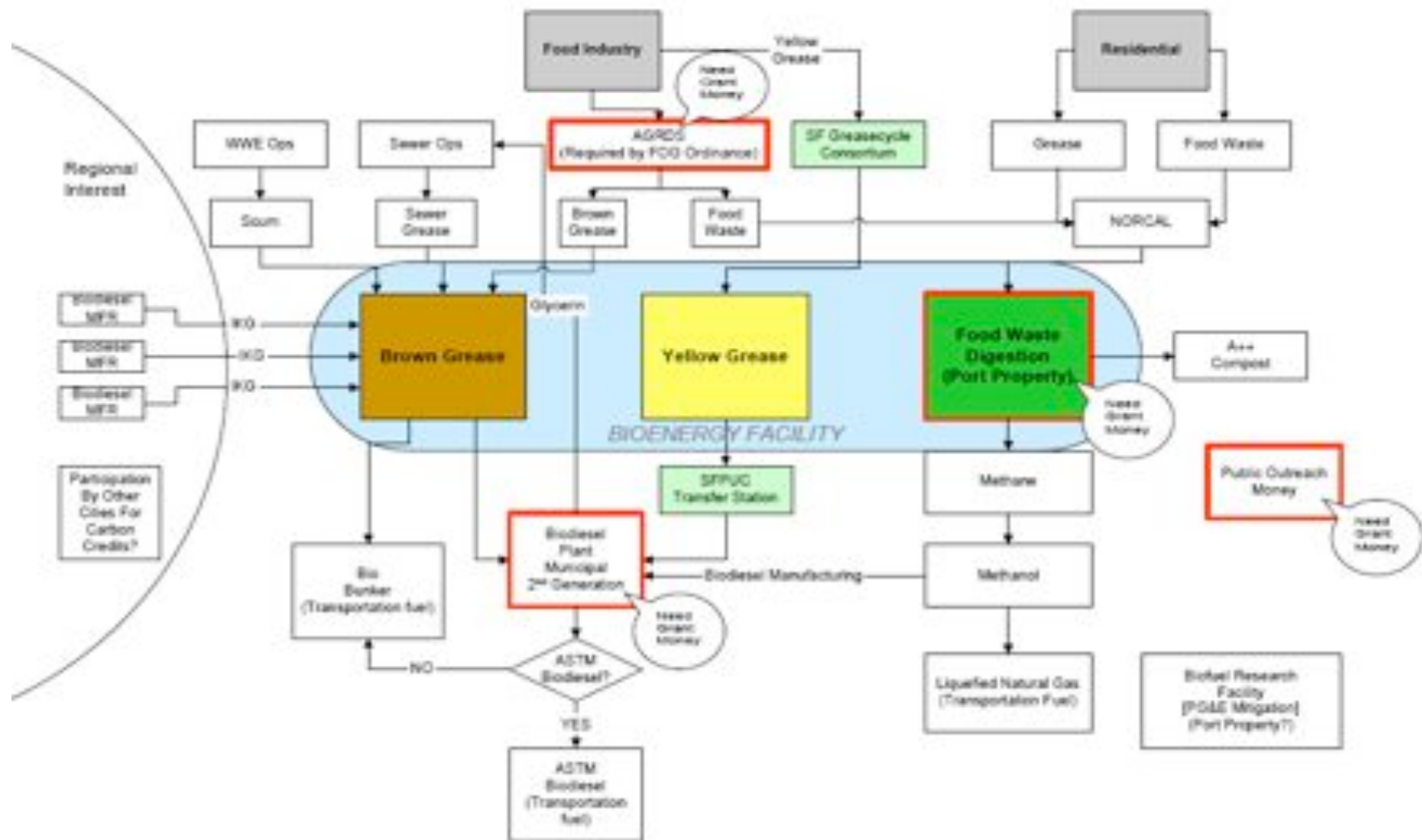
YES!





CITY OF SAN FRANCISCO, PUBLIC UTILITIES COMMISSION BIOENERGY FACILITY

May 28, 2008



Organic Wastestream Management Systems Optimized for Energy Recovery

- can be rationalized on economic projections that include the impact of climate change on our economy along with rising construction costs
- fit well within existing utility infrastructure entities that have budgets and people; celebrating their skills while expanding their scope of services
- is a shift from dealing in waste to generating energy; wastewater is really just fortified water